



## WORKPLACE SAFETY AND HEALTH IN WEST VIRGINIA



*From The  
National Institute for Occupational Safety and Health*

### State Profile 2002

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*Delivering on the Nation's promise:  
Safety and health at work for all people through prevention.*

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### The National Institute for Occupational Safety and Health

NIOSH is the primary federal agency responsible for conducting research and making recommendations for the prevention of work-related illness and injury. NIOSH is located in the Department of Health and Human Services in the Centers for Disease Control and Prevention. The NIOSH mission is to provide national and world leadership to prevent work-related illness, injury, disability, and death by gathering information, conducting scientific research, and translating the knowledge gained into products and services. As part of its mission, NIOSH supports programs in every state to improve the health and safety of workers. NIOSH has developed this document to highlight recent NIOSH programs important to workers and employers in West Virginia.

### The Burden of Occupational Illness and Injury in West Virginia

- In West Virginia, there are approximately 779,000 individuals employed in the workforce.<sup>1</sup>
- In 2000, 46 workers died as a result of workplace injuries.<sup>2</sup>
- The mining industry had the highest number of fatalities, followed second by retail trades, and third by construction.<sup>2</sup>
- In 1999, the most recent year for which data are available, the rate of fatal workplace injuries was 7.5 deaths per 100,000 workers—above the national average rate of 4.5 deaths per 100,000 workers.<sup>2</sup>
- In 2000, there were 32,700 nonfatal workplace injuries and illnesses in West Virginia.<sup>3</sup>

### The Cost of Occupational Injury and Illness in West Virginia

In 2000, the most recent year for which data are available, a total of \$741 million was paid for workers' compensation claims by West Virginia private insurers, self-insured employers, and state funds.<sup>4</sup> This figure does not include compensation paid to workers employed by the federal government and also underestimates financial burden for private sector businesses, since only a fraction of health care costs and earnings lost through work injuries and illnesses is covered by workers' compensation. Chronic occupational illnesses like cancer are substantially under-reported in workers' compensation systems because work-relatedness is often difficult to establish.

# **How NIOSH Prevents Worker Injuries and Diseases in West Virginia**

## **Health Hazard Evaluations (HHEs) and Technical Assistance**

NIOSH evaluates workplace hazards and recommends solutions when requested by employers, workers, or state or federal agencies. Since 1993, NIOSH has responded to 87 requests for HHEs in West Virginia in a variety of industrial settings, including the following example:

### ***Shinnston, West Virginia: Exposure to Hydraulic Fluid in a Coal Mine***

In 1999-2001, NIOSH conducted an HHE to evaluate employees' possible health effects such as asthma and dermatitis from exposure to the hydraulic fluid used at a coal mine in Shinnston, West Virginia. Investigators evaluated employee exposure to the hydraulic fluid emulsion used to pressurize longwall shields and to bacteria and fungi in the emulsion, the shearer spray water, and the mine air. The emulsion was similar in composition to a metalworking fluid that can cause allergic reactions in susceptible individuals. It also was found that emulsion spillage can release formaldehyde at NIOSH recommended exposure limit concentrations during routine operations and at Mine Safety and Health Administration permissible exposure limit concentrations during large spills. In addition, the shearer water supply and mine air contained bacteria and fungi associated with the reported symptoms. Recommendations to managers included: possibly using alternative hydraulic fluids that can be diluted more; implementing a maintenance program to prevent system failures and minimize leakage; sampling for formaldehyde during large spills; medically monitoring employees who handle hydraulic fluids; and better treating the shearer spray water for bacteria and fungi.

## **Fatality Assessment and Control Evaluation (FACE) Investigations**

NIOSH developed the FACE program to identify work situations with a high fatality risk and to formulate and disseminate prevention strategies. In West Virginia, FACE is conducted by the Department of Health and Human Services under a cooperative agreement with NIOSH. Since 1995, there have been 23 FACE investigations in West Virginia, including the following recent example:

### ***West Virginia: Maintenance Supervisor Dies During Truck Inspection***

On May 24, 2000, a 37-year-old male asphalt and concrete plant maintenance supervisor died of injuries sustained when he got caught between the dump bed and frame of a truck. The victim and a coworker were repairing the truck's brake lights and raised the dump bed for better access to them. While his coworker went to bring supports for the elevated dump bed, the victim crawled between the elevated bed and the truck frame. He either mistook the dump bed's pull-off cable for a wire or inadvertently contacted it, causing the bed to suddenly fall. The FACE investigator's recommendations to employers included ensuring that parts of trucks needing inspection or repairs are safely secured and implementing a safety program which includes task-specific safety procedures and worker training in hazard identification and control.

## **Fire Fighter Fatality Investigation and Prevention Program**

The purpose of the NIOSH Fire Fighter Fatality Investigation and Prevention Program is to determine factors that cause or contribute to fire fighter deaths suffered in the line of duty. NIOSH uses data from these investigations to generate fatality investigation reports and a database of case results that guides the development of prevention and intervention activities. Since 1997, there have been four fire fighter fatality investigations in West Virginia.

## **Building State Capacity**

### ***NIOSH Morgantown Facility***

NIOSH employs over 500 individuals in its Morgantown facility, where three NIOSH Divisions are located. The Division of Respiratory Disease Studies administers legislatively mandated medical services for coal miners and conducts programs to identify, evaluate, and prevent occupational respiratory disease, such as asthma, chronic obstructive pulmonary disease, and pneumoconiosis. The Division of Safety Research focuses on traumatic occupational injuries, with programs in surveillance, analytic epidemiology, safety and human factors engineering, and health communication. The Health Effects Laboratory Division conducts focused, applied, and preventive laboratory research and develops effective health communications for controlling and preventing workplace safety and health problems.

### **Extramural Programs Funded by NIOSH**

The following are examples of recent research grants, training grants, or cooperative agreements funded by NIOSH in the state of West Virginia.

#### ***West Virginia University, Industrial Engineering***

This occupational safety and health engineering program is administered through the Industrial Engineering Department in the College of Engineering. It provides training to undergraduate and graduate engineering students, as well as to graduate students in other disciplines. In 2001, 19 students were enrolled and 12 were graduated.

#### ***West Virginia University***

The purpose of this program is to integrate occupational health, industrial hygiene, and safety training to meet state and regional needs for clinical and preventive services for workers. Available programs include residencies in occupational medicine, training in occupational safety, and outreach projects for workers and businesses. In 2001, five students were enrolled and three students were graduated. One continuing education course was conducted for eight participants.

#### ***A New Method to Control Pillar Failure in Mines***

In underground mines, blocks of mineral deposit called pillars are left to support the required spaces for a healthy and safe working environment. However, numerous cases of pillar failure in a large area with no or little warning have been reported in underground evaporate, coal, and metal mines worldwide. This type of pillar failure, called cascading pillar failure, often results in devastating effects (e.g., air blasts, inrush of harmful gases, and seismic events) on mine structures and production and miners' health and safety. Researchers at the University of West Virginia, with support from NIOSH, are studying the factors leading to cascading pillar failures in underground mines in order to develop preventive guidelines.

*Additional information regarding NIOSH services and activities can be accessed through the NIOSH home page at <http://www.cdc.gov/niosh/homepage.html> or by calling the NIOSH 800-number at 1-800-356-NIOSH (1-800-356-4674).*

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<sup>1</sup>U.S. Department of Labor (DOL), Bureau of Labor Statistics (BLS), Local Area Unemployment Statistics, Current Population Survey, 2000.

<sup>2</sup>DOL, BLS in cooperation with state and federal agencies, Census of Fatal Occupational Injuries, 1999-2000.

<sup>3</sup>DOL, BLS in cooperation with participating state agencies, Survey of Occupational Injuries and Illnesses, 2000.

<sup>4</sup>National Academy of Social Insurance, *Workers' Compensation: Benefits, Coverage, and Costs, 2000 New Estimates*, May 2002.